

Synergising Biodiversity Research, Tribal Livelihoods and Self-sustaining Conservation in Arunachal Pradesh

The Eaglenest Story: Past & Future

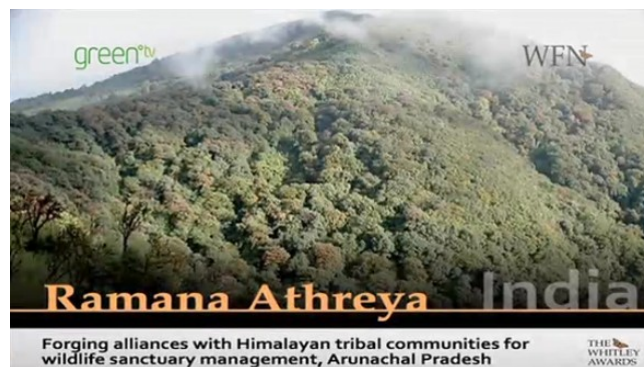


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<https://www.iiserpune.ac.in/~rathreya/Eaglenest>

[Video of Sir David Attenborough](#), the voice of BBC natural history films, introducing the Eaglenest conservation project to the audience at the Whitley Awards¹ ceremony at the Royal Geographical Society, London.



¹ See [Whitley Awards \(UK\) in Wikipedia](#)

Key Challenges For Conservation Initiatives

1. ***Making conservation financially self-sufficient***
Conservation projects need a decade or more to achieve enduring success, which is much longer than a typical donor's interest span. Many projects terminate when the funding stops, resulting in the waste of money, effort and time already invested.
2. ***Creating a synergy between (ecological) research and conservation***
Since conservation is largely a socio-economic issue in India, most (not all) ecological research has been irrelevant to both conservation and tribal communities
3. ***Catering to socio-economic aspirations of tribal communities, without unsustainable exploitation of forest resources***
Most conservation projects focus on advocacy and activism. Even projects which provide economic incentives seldom appreciate the (increasing) level of aspirations in tribal communities, expecting them to be satisfied with minimum wage levels.
4. ***Instituting tribal community-led conservation programmes communities***
Conservation projects manned by non-locals tend to be more expensive (logistics, higher wages, etc) and are often in conflict with local socio-economic aspirations. Therefore, a conservation project by-, of- and for the local community will be cost-effective and has the best chance of long-term success.

We propose to address these issues as follows:

1. Use the initial grant to develop a livelihoods programme which can locally generate revenue to fund local conservation every year.
2. Incentivise community-led conservation by creating livelihoods which depend on biodiversity (e.g. ecotourism), and hence its conservation.
3. People only protect that which they appreciate or own. Therefore, we will promote local conservation by helping the community experience the multi-faceted wilderness, appreciate its global value, and play the major role in its management.
4. Biodiversity research will be used to create a tourism narrative and add knowledge-based value which will double revenue without extra infrastructure. It will also provide attractive audio-visuals for nature education and conservation outreach.

We² implemented many of these strategies in a ecotourism-based conservation project with the Bugun tribe of Singchung village, Arunachal Pradesh, during 2003-19. The ecotourism has *sustained itself without additional funding since 2006 providing employment to about 25 persons*. This effort led to one of the most tangible community-led conservation successes in India – wherein the Bugun community has set aside 32 km² of the community forest as a legally protected Community Reserve, which also acts as a buffer zone for Eaglenest and Sessa wildlife sanctuaries.

² includes Bugun tribe, Govt officials (Forest Department), ecologists, amateur naturalists and NGOs

This Proposal: Scale the venture by a factor 20

The pilot project, expectedly, lacked scale. This limited the number of local beneficiaries, made the venture susceptible to shocks like the Covid-19 and did not generate much revenue beyond the livelihoods to fund local conservation activities.

The newly declared Bugun Community Reserve, which protects the northern boundary of Eaglenest provides an excellent opportunity for a community to play the principal role in the conservation of biodiversity. However, the protection of the Community Reserve and other conservation activities in the area will require annual funding on a continuing basis.

We propose to scale up the existing venture by a factor of 20 to

- Make it financially more robust and self-reliant
- Create more and better livelihoods in the Eaglenest communities (directly benefit over 100 families and indirectly benefit the entire region of about 1000 families.
- Uniquely, generate sufficient surplus revenue to fund conservation. i.e. [complete the Conservation-promotes-Livelihoods-promotes-Conservation loop](#)
 - integrating conservation goals with financial self-sufficiency and longevity will greatly increase the probability of conservation success
 - a paradigm shift towards self-sustaining conservation, which has not been implemented anywhere else in India.

Arunachal is socio-economically backward but is biologically one of the richest areas in the world. It is investing heavily in infrastructure which will impact the wilderness (dams, roads, etc). We need to steer development in a direction which combines both biodiversity conservation and sustainable livelihoods – now. A decade from now may be too late.

Biodiversity Made Real

Moth research in and around Eaglenest using ultraviolet screens has yielded over 1000 species. The screen shown has over 2000 individuals and 200 different species. Moths are an untapped resource to convey the true meaning of biodiversity, beyond mammals and birds, to the public.

Moth tourism will be a major component in our future efforts.



Project Promoter – Ramana Athreya³

- 1989-1997: PhD/Postdoc in astronomy at Tata Institute of Fundamental Research
- 1998-2003: Postdoctoral researcher at observatories in France and Chile
- 2003: Faculty position at Tata Institute of Fundamental Research
- 2003: Started the conservation project in Eaglenest as a pastime.
- 2009-Present: Associate Professor at Indian Institute of Science Education & Research (IISER) Pune, supervising PhD researchers in ecology and astronomy. The success in the conservation project, even without formal training in ecology, resulted in the dual faculty position in biology and physics in IISER Pune in 2009.

He discovered the Bugun Liocichla in 2006, a stunningly colourful previously unknown bird

- *First bird discovered and described by an Indian*
- Globally limited to Eaglenest and Bugun forest.
- BirdLife International and Bombay Natural History Society described it as "the most sensational ornithological discovery in India in half a century". It was reported by 100+ news sites world-wide.



Postage stamp released by the Indian Prime Minister at the United Nations Convention on Biological Diversity.



excerpt from the press release of the Whitley Award

Princess presents top conservation accolade to Arunachal naturalist

LONDON, UK: 11 MAY 2011

HRH The Princess Royal (Princess Anne) tonight presented one of the world's top prizes for grass-roots nature conservation – The Whitley Award – to Dr Ramana Athreya ...

WFN's aims to identify the world's most dynamic conservation leaders and support them in practical work that benefits both wildlife and local communities, ... displaying both a strong track record in science-based conservation and a viable plan for taking their work further.

[project page on Whitley website](#)



Video of the award ceremony available at [IISER \(4 min clip\)](#) or on [YouTube \(entire ceremony, 97 min\)](#).

³ People with first hand knowledge of this project: [Dr. Dhananjai Mohan](#): Principal Chief Conservator of Forests, Uttarakhand; [Prof. L. S. Shashidhara](#): IISER Pune; Ashoka University, New Delhi; [Prof. Stuart Pimm](#): Duke University, USA; [Prof. Trevor Price](#): University of Chicago, USA; [Mr. Millo Tasser](#): Deputy Conservator of Forests, Arunachal Pradesh (ex-Divisional Forest Officer, Eaglenest wildlife sanctuary)

Eaglenest Biodiversity Project (2003-2019)

- Partnered the Bugun tribe on conservation of Eaglenest sanctuary (in their backyard)
- Pioneered the use of biodiversity research to promote tribal livelihoods
- Initiated community ecotourism focusing on financial self-sustenance and longevity

Tourism numbers

- 2003-2007: Rs. 12 lakhs grant for research, capacity building and basic tourist facilities
- 2006-2010: ecotourism initiated by Athreya
- 2011-present: managed by Buguns
- profitable from 2006 itself
- employs about 25 people
- annual revenue: about Rs. 40 lakh from ~200 national/international tourists
- 2017: Buguns declared 17 km² of their forest as a legally protected reserve; expansion to 32 km² in 2022 – a generous gesture at a time when encroachment of public land is the norm. A rare tangible conservation success which will live beyond the project!



Article Lead from international nature magazine: Mongabay
When astronomer-turned-ecologist Ramana Athreya approached the Buguns in 2003 with an idea for a community bird ecotourism venture, Indi agreed to give it a go. Today, the bird tourism venture has

Chief Minister of Arunachal Pradesh



Pema Khandu
@PemaKhanduBJP

2:00 PM · Sep 19, 2019 · Twitter for iPhone

If you happen to sight rare wild animals & birds during visit to [#Eaglenest](#) [#WildLifeSanctuary](#) in [#WestKameng](#), its the work of the local indigenous community that works actively to protect the natural ecosystem. Beautiful account of that experience here: natgeotraveller.in/chance-encount...

Principal lessons from the pilot project

- **Material benefits can promote conservation:** tourism benefits led to the community reserve
- **Conservation success requires a long gestation and patience** Many projects fail to last the distance because of lack of long-term funding. The financial self-sufficiency of ecotourism facilitated a continuing dialogue for over a decade while the Buguns were evaluating the benefits of conservation.
- **High return on investment due to meticulous research on bird distribution** Bird tourists were willing to pay good money for skilled local bird guides and knowledge of bird distribution in different seasons and across 3000 m elevation

Prior to 2003 less than five tourists had visited Eaglenest. Athreya's research highlighted its spectacular bird assemblage. It now draws visitors from all over the world and is on the calendar of many commercial bird tour companies.

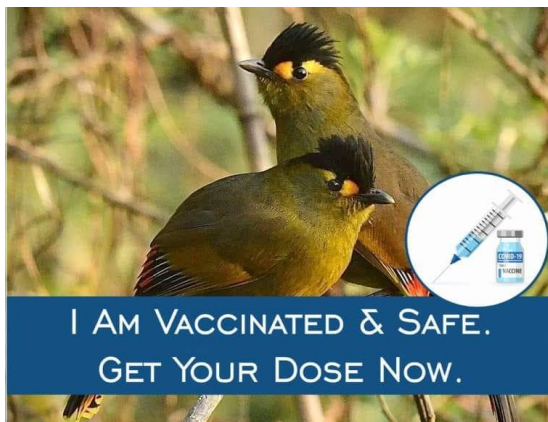


named after the tribe

Bugun Liocichla

Mascot of Conservation & Ecotourism

and life in general ... from covid vaccination to the local football club!



Bugun Liocichla Festival celebrated under the patronage of the State Government (Mr. Pema Khandu, Chief Minister of Arunachal Pradesh is on the hoarding). The Bird has come to symbolise the capacity of tribal communities to go beyond their traditional image as hunters, and construct a future in which conservation and socio-economic development both play a role.

This Proposal – Eaglenest Conservation Phase 2 (2022)

Our goal is to create a large number of sustainable and ecofriendly local livelihoods to promote conservation, and make the conservation project self-sustaining. Both these will be achieved by scaling up ecotourism by a factor 20

- Positively impact the entire Singchung/Shergaon village of 1000 families – while directly employing more than 100 persons, with greater income than in Phase 1
- *Earmark 10% of the (gross) revenue to fund local conservation activities*

The schematic of the venture consisting of 5 connected entities is shown below:

Non-profit entity

1. **Eaglenest Conservation Centre (ECC)** ... will
 - a. generate biodiversity data for tourism, research, conservation and education
 - b. local skilling programme for responsible and effective ecotourism
 - c. coordinate among the other four entities
 - d. ensure gender and social equity of ecotourism benefits
 - e. reinforcing the link between ecotourism and conservation.

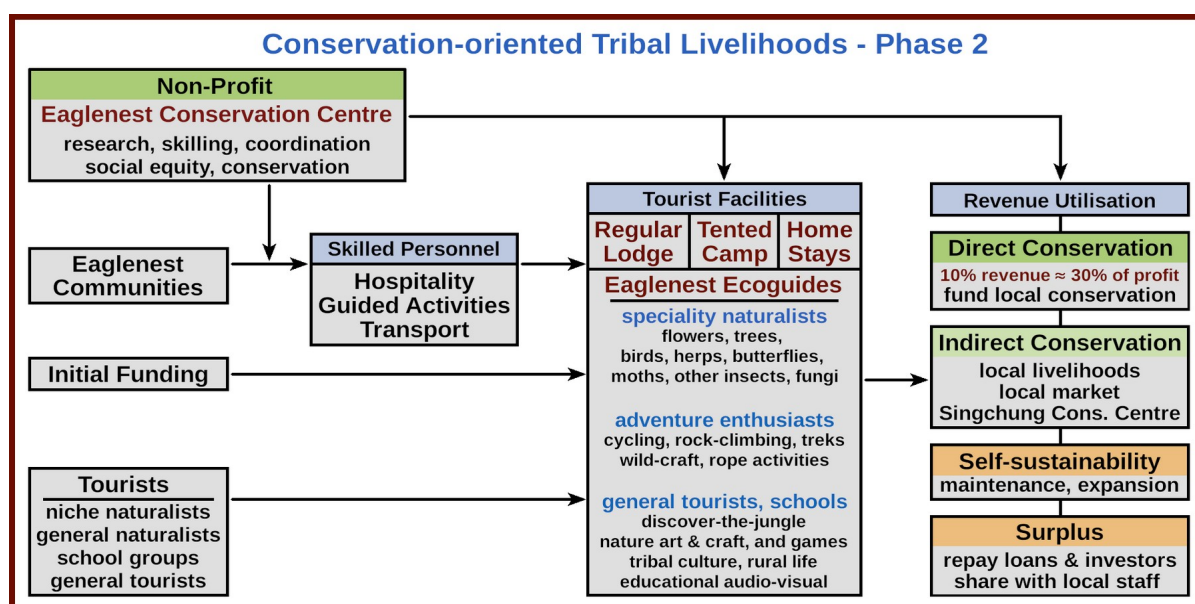
The data, *collected by trained local youth*, will consist of distribution of biodiversity across dimensions of space, time and environmental parameters. It will be used for

- a. **High value guiding**: increases diversity of species that a tourist can be shown
- b. **Globally competitive research** into ecological and evolutionary processes

Value addition by research doubles revenue for 25% increase in investment
crucial for increasing revenue to fund local conservation activities

Revenue-generating entities

2. **The Lodge** (14 rooms): catering to specialist naturalist tourists, greater comfort.
3. **Tented Camp** (20 tents): large school groups and budget naturalists.
4. **Home-stays** (25 rooms): introductory *Arunachal-Jungle* experience and rural-tribal tourism options for first-time nature tourists; also promote gender and social equity.
5. **Eaglenest EcoGuides** (Guiding services only; no accommodation): liaise with ECC to translate research into tourism value, to maintain the USP of the venture



Stakeholders: The stake-holders of this conservation venture are

- i. Local biodiversity conservation
- ii. Eaglenest communities who will manage local conservation,
- iii. donor/investor
- iv. promoter/staff.

Investment: This project has both [knowledge-generating \(non-profit\)](#) and [revenue-generating components](#). We seek funding for both in one or more of the following modes:

- i. charitable donation
- ii. soft loan, with an interest rate between zero and inflation
- iii. social investor: who is satisfied with a modest rate of return (plus conservation).

Basic Financials of the Proposed Conservation Venture: ⁴

- Total Investment: INR 8 Cr. (over 2 years)
- Annual numbers for occupancy rate of 67%
 - Tourist footfall: ~10000
 - Revenue: Rs. 13.5 Cr, Expenditure 11.5 Cr, Surplus: 2 Cr (from year 6)
 - **Conservation benefits**
 - Direct: Conservation fund: 10% of revenue = 1.4 Cr
 - Indirect: incl. local wages: ~47% of expenditure
 - Indirect: Local economy: ~85% of expenditure
- Schedule: year 2: start of tourism; y4: positive cash flow; y6: targeted footfall
- Disposal of surplus – *after* disbursement of conservation fund
 - **charitable grant:** donor's "share" of the surplus will be added to the conservation fund – highest funding to local conservation activities.
 - **soft loan:** biodiversity conservation (education and research), local stakeholders and loan repayment (over 8-10 years).
 - **social investment:** distributed among stakeholders as per agreement

Features of the ecotourism project

[Conservative financial estimates](#)

- Minimum occupancy to break even: only 30% (no revenue surplus, but local employment and conservation fund will still promote local conservation)
- 67% occupancy is just 10% of the 100,000+ tourists visiting Tawang (along the highway just 2 km from the Community Reserve outside Eaglenest).
- The average price for boarding and lodging is only Rs. 2000 per night. The bulk of the profit comes from (research) value-added guided activities.
- Value addition from biodiversity research doubles the revenue for just 25% increase in expenditure.

[Risk mitigants](#)

- Strong links to local stake-holders: Eaglenest communities and Forest Dept
- All components proven in the pilot Phase 1

[Value from pilot phase](#)

- Eaglenest sanctuary is an international brand because of our efforts since 2003.

⁴ In US Dollar terms: investment=1.15, revenue=1.71, expenditure=1.4, surplus=0.31 millions

- The uniqueness of the Eaglenest conservation success story and the presence of the Bugun Liocichla (found nowhere else in the world).
- The association of scientists with this venture for two decades provides a headstart of (at least) 5 years over potential competitors.

Other advantages

- Eaglenest communities have a monopoly over some of the best, accessible community forests in Arunachal, with an extraordinary biodiversity ensemble across 3000 m of elevation.
- Expanded tourism menu beyond birds: “biodiversity” tourism (flowers, insects, amphibians, mushrooms, etc), school groups, nature-based adventure and *introductory-jungle-experience* for general tourists.



Securing the Future: Nurturing Tomorrow's Conservationists

The Forest Department has set up a very attractive and informative Nature Interpretation Centre which provides a variety of fun-filled learning experiences to school groups and the public.

Many of the displays are from Eagle-nest Biodiversity Project.

This is also an excellent resource for tourists.

Web Presence

1. [Whitley Award](#), Royal Geographical Society, London (2011)
 - a) [Introduction of the project by Sir David Attenborough](#)
 - b) [Project description on Whitley Fund for Nature webpage](#)
 - c) [Award acceptance speech](#)
2. Sanctuary Wildlife Service Award (2022)
 - a) [Full award ceremony](#)
 - b) [Short clip of award ceremony](#) (4 min section of previous)
 - c) [Blurb on Sanctuary Nature Foundation](#)
3. [Sentinels of Eaglenest](#), a documentary by well-known journalist [Karma Paljor](#)
4. [The Bugun and the Liocichla](#) (2019)

This movie was made by Shaleena Phinya, a young Bugun lady who was trained in movie-making (by the NGO Green Hub), as part of the skilling programme initiated by the Eaglenest Forest Officer. It is an evocative movie on how the younger generation views the conservation project – a generation which was still in school when this project started in 2003. Shaleena is also the lone female member of the Bugun Community Reserve patrolling team
5. Details of the first Bugun Liocichla Utsav (festival) commemorating its discovery
 - a) Arunachal Today News: [First Bugun Liocichla Utsav begins today at Singchung](#)
Minister for Environment & Forest Mama Natung inaugurates the first Bugun Liocichla Utsav at Singchung, being organized by Singchung Bogun Village Community Reserve (SBVCR)
 - b) Arunachal Today News: [First Bugun Liocichla Utsav concludes](#)
6. Articles in Mongabay by Shreya Dasgupta (2018)
 - a) [Part 1: Bird-business: the man who taught his-tribe-to-profit-from-conservation/](#)
 - b) [Part 2: From a new bird to a new community reserve – Indias tribe sets example](#)
7. Amateur videos of visitors to Eaglenest
 - a) [Explore Eaglenest Wildlife Sanctuary | Paradise for birds & nature lovers](#)
 - b) [bird photography at Eaglenest wildlife santuary, Sela pass and Nameri](#)
 - c) [The Hidden Gem – Eaglenest Wildlife Sanctuary](#)
 - d) [Birdwatching in Eaglenest Sela Mandala](#)